



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/600,207	06/19/2003	Darko Segota	11023.3	9028		
21999	7590	09/24/2007	EXAMINER			
KIRTON AND MCCONKIE 60 EAST SOUTH TEMPLE, SUITE 1800 SALT LAKE CITY, UT 84111			ELDRED, JOHN W			
ART UNIT		PAPER NUMBER				
3641						
MAIL DATE		DELIVERY MODE				
09/24/2007		PAPER				

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/600,207	SEGOTA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	J. Woodrow Eldred	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 2-15-07 for an RCE.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-14, 16, 17, 19-22, 24-43 and 45-58 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-14, 16, 17, 19-22, 24-43, and 45-58 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 12-14, 16, 17, 19-22, 24-26, 29-34, 37-39, 43-45, 47-49, and 52-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wells et al (5,505,409) in view of Fronek et al (5,848,769).

Wells et al disclose a fluid flow regulator on the surface of an object comprising a plurality of steps that create low pressure areas and thus effect the fluid flow and drag upon the object. Wells et al disclose the regulators being used upon a variety of object, and specifically mention the broad category of airfoils and wings for aircraft. See especially column 2, lines 18-19; column 3, lines 11-45; and column 4, lines 3-41 of Wells et al. Note that column 3, line 64 teaches a vertical lee face, which reads over the “orthogonal pressure recovery drop”. To employ the fluid flow regulators of Wells et al on a particular airfoil of an aircraft, such as the claimed stabilizer or rudder, is considered to have been obvious to one having ordinary skill in the art, since this is merely applying the disclosed regulators to a particular type of airfoil or wing within the broadly disclosed category of intended use by Wells et al. Also, the limitation of having the “pressure recovery drop located proximate an optimal pressure recovery point” is considered to have been obvious to one having ordinary skill in the art. Applicant defines this “point” as being the curvilinear line along the surface where adverse pressure creates unwanted drag. Wells et al specifically discloses that the flow regulators are to reduce unwanted drag, so it is considered to be normal engineering practice to place a regulators (which are placed at a number of locations) at a position that would be “optimal” to reduce drag in order to increase performance by a maximum amount. Note that without further structural distinctions, the disclosed fluid flow regulator is considered to read over the diffuser vane”. Wells et al fail to

disclose that the fluid flow regulator is “removeably attached”. Fronek et al teach that it is known to removeably attach various drag reduction articles to aircraft flow surfaces. See especially column 1, lines 20-26 and 32-36; and column 5, lines 44-59. Motivation to combine is the teaching of Fronek et al that “routine maintenance may require that the drag reduction article be removed or replaced.” This would allow, for example, damaged articles to be easily replaced. To employ the teachings of Fronek et al on the fluid flow regulator of Wells et al and have the regulator be removeably attached is considered to have been obvious to one having ordinary skill in the art.

3. Claims 1-14, 16, 17, 19-22, 24-43, and 45-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Falco (5,133,519) in view of Fronek et al (5,848,769).  
Falco discloses a fluid flow regulator on the surface of an object comprising a plurality of orthogonal steps that create low pressure areas and thus effect the fluid flow and drag upon the object. Falco discloses the regulators being used upon a variety of object, and specifically mention the broad category of airfoils and wings for aircraft. See especially column 7, lines 17-19; column 3, lines 11-60; and Figures 1 and 4 of Falco. To employ the fluid flow regulators of Falco on a particular airfoil of an aircraft, such as the claimed stabilizer or rudder, is considered to have been obvious to one having ordinary skill in the art, since this is merely applying the disclosed regulators to a particular type of airfoil or wing within the broadly disclosed category of intended use by Falco. Also, the limitation of having the “pressure recovery drop located proximate an optimal pressure recovery point” is considered to have been obvious to one having ordinary skill in the art. Applicant defines this “point” as being the curvilinear line along the surface where adverse pressure creates unwanted drag. Falco specifically discloses that the flow regulators are to reduce unwanted drag, so it is considered to be normal engineering practice to place a regulators (which are placed at a number of locations) at a position that would be “optimal” to reduce drag in order to increase performance by a maximum amount. Falco fails to disclose that the fluid flow regulator is “removeably attached”. Fronek et al teach that it is known to removeably attach various drag reduction articles to aircraft flow surfaces. See especially column 1, lines 27-29. Motivation to combine is the teaching of Fronek et al that “routine maintenance may require that the drag reduction article be removed or replaced.” This

would allow, for example, damaged articles to be easily replaced. To employ the teachings of Fronek et al on the fluid flow regulator of Falco and have the regulator be removable attached is considered to have been obvious to one having ordinary skill in the art.

4. Applicant's arguments filed 2-15-07 have been fully considered but they are not persuasive. The argument in regard to Dietz et al is moot in view of the new rejections using Fronek et al to teach removable drag reduction articles.

The argument concerning Wells et al failing to teach an "orthogonal pressure recovery drop" is not considered convincing. In the first place, Applicant argues a limitation from the specification that is not present in the claims by arguing that ""orthogonal" describes the relationship of the intersection of the angle formed by the vertical drop face and the trailing edge." The claims do not specify that it is the trailing edge and the step face which have an orthogonal relation. In regard to Wells et al, the lee face of the step is defined as "vertical" so it is inherently orthogonal to some horizontal element of the system. It is at least orthogonal to the mean airflow over the airframe at the step and, while not specifically disclosed in the specification, the lee face does appear to be orthogonal to the trailing edge 11 shown in Figures 1 and 2. In view of the Figures and lack of specific angle between the lee face and trailing edge, it would be considered obvious to have these elements orthogonal.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Woodrow Eldred whose telephone number is 571-272-6901. The examiner can normally be reached on Monday to Thursday, from 8:00 a.m. to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J. Woodrow Eldred/  
Primary Examiner  
Art Unit 3641

JWE